Adenovirus type 2 isolated from a patient with fatal Kawasaki disease

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The article by Rowe and Rose on Kawasaki disease, or mucocutaneous lymph node syndrome (*Can Med Assoc J* 1985; 132: 25-28), prompts us to describe a fatal case of the disease.

Case report

A 7-month-old white boy was admitted to hospital for an illness characterized by a high-grade fever, excessive irritability and a transient maculopapular rash. Urine and blood specimens yielded no bacterial pathogens when cultured. Electron microscopy of a stool sample did not show any viral particles. A lumbar puncture revealed aseptic meningitis, as the cerebrospinal fluid did not yield bacteria or viruses when cultured. However, two-dimensional echocardiograms showed a left coronary artery aneurysm, which, along with the other symptoms, suggested Kawasaki disease.

Four weeks after admission the infant suffered severe cardiac arrest, from which he could not be resuscitated. On the basis of autopsy results, death was attributed to acute and chronic coronary insufficiency associated with severe coronary arteritis, to multiple coronary artery aneurysms and to thrombosis of the right coronary artery and the main branches of the left coronary artery.

Specimens from the spleen, the heart and a mesenteric lymph node submitted for virologic examination were treated as previously described.[1] When neonatal foreskin cell cultures that had been inoculated with suspensions of each tissue were examined for a cytopathic effect, no virus was observed in either the spleen or heart cultures, but virus with a focal cytopathic effect was seen in the lymph node cultures. Following electron microscopic examination of the latter cultures, the virus was identified as an adenovirus.

Restriction endonuclease digestion analysis was carried out as previously described[2] on the adenovirus obtained from the lymph node. Using the enzymes Bam HI, Kpn I (Fig. 1, left panel), Sal I, Sma I (Fig. 1, right panel), Sst I, Xba and Xho I, we showed that the virus had restriction patterns identical to those of adenovirus type 2 but different from those of adenovirus types 4, 5, 7 and 10. This result was confirmed by serologic typing by Dr. J. Heirholzer, of the Centers for Disease Control, Atlanta.

Comment

Kawasaki disease has been associated with a variety of bacterial and viral agents.[3-5] There is serologic evidence that many children with the disease had been infected with viruses of the respiratory and enteric tracts.[5] Parainfluenza virus type 2, adenovirus type 3, herpes simplex virus and echovirus type 2 have been isolated from patients with Kawasaki disease;[6,7] however, tissue taken at the time of autopsy has generally failed to yield any bacterial or viral agents.[3]

References

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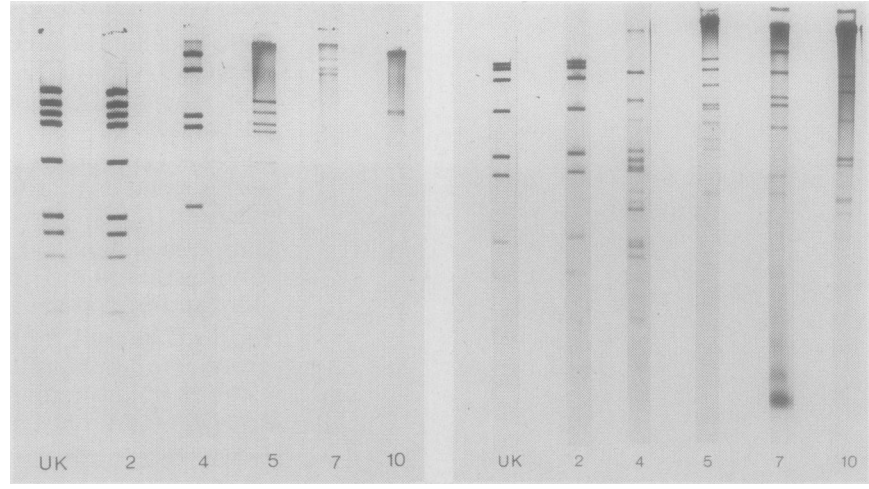

Fig. 1—Patterns produced by restriction endonuclease digestion of the unknown adenovirus (UK) and adenovirus types 2, 4, 5, 7 and 10 with enzymes Kpn I (left) and Sma I (right).

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